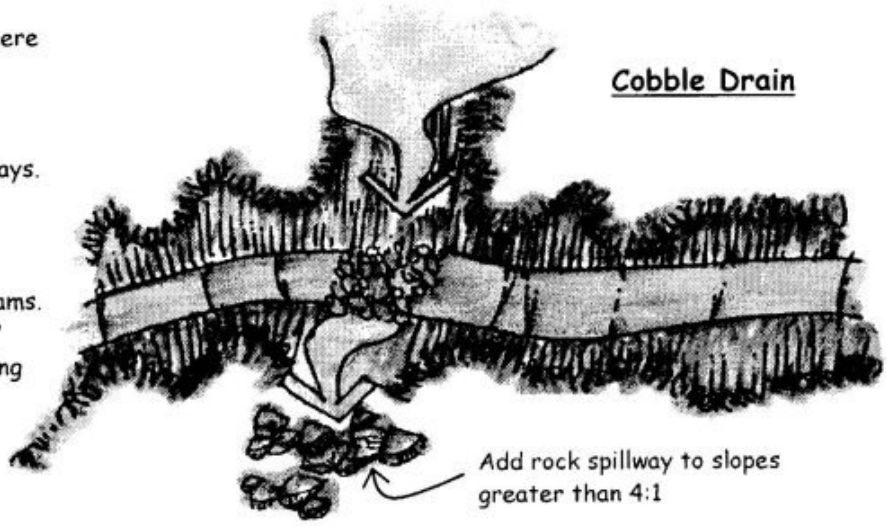
17.18.080: DRAINAGE PLANNING:

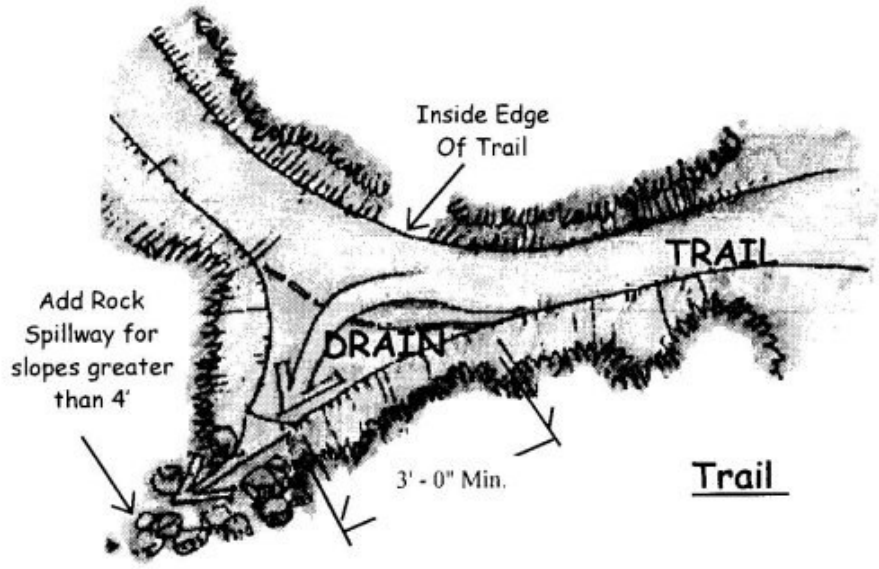
Careful study of topography adjacent to the trail may yield insight to maximize protection of the trail, while minimizing trail structures. General drainage should be studied at fifty (50) stations with provisions made to protect the trail.

A. Swells And Culverts: Drainage swells or culverts should be installed on trails at locations where the normal cross slope will not allow for adequate drainage. Drainage swells are not allowed on paved trails. Drains are best located at low points or bends in the trail along existing natural drainageways.

Wherever water is concentrated into new locations or in heavier concentrations, erosion protection needs to be evaluated and installed if necessary. Native stone is the preferred material.

Cobble Drain: Use where intermittent flow is expected, such as in pronounced gullies or established drainageways. Do not use where continuous flow is expected, such as at seeps, springs or streams. Cobbles shall be 2"-3" stones stockpiled during trail construction.

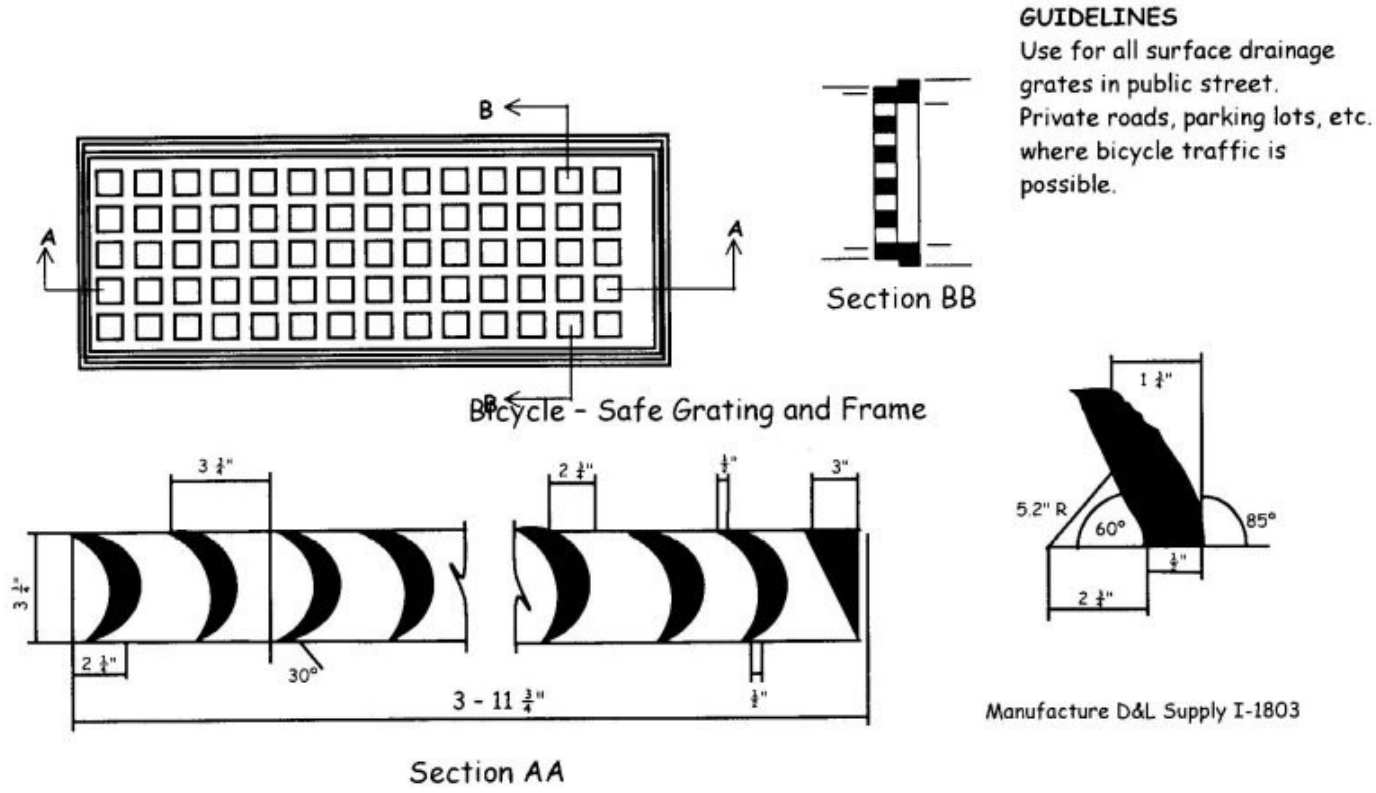




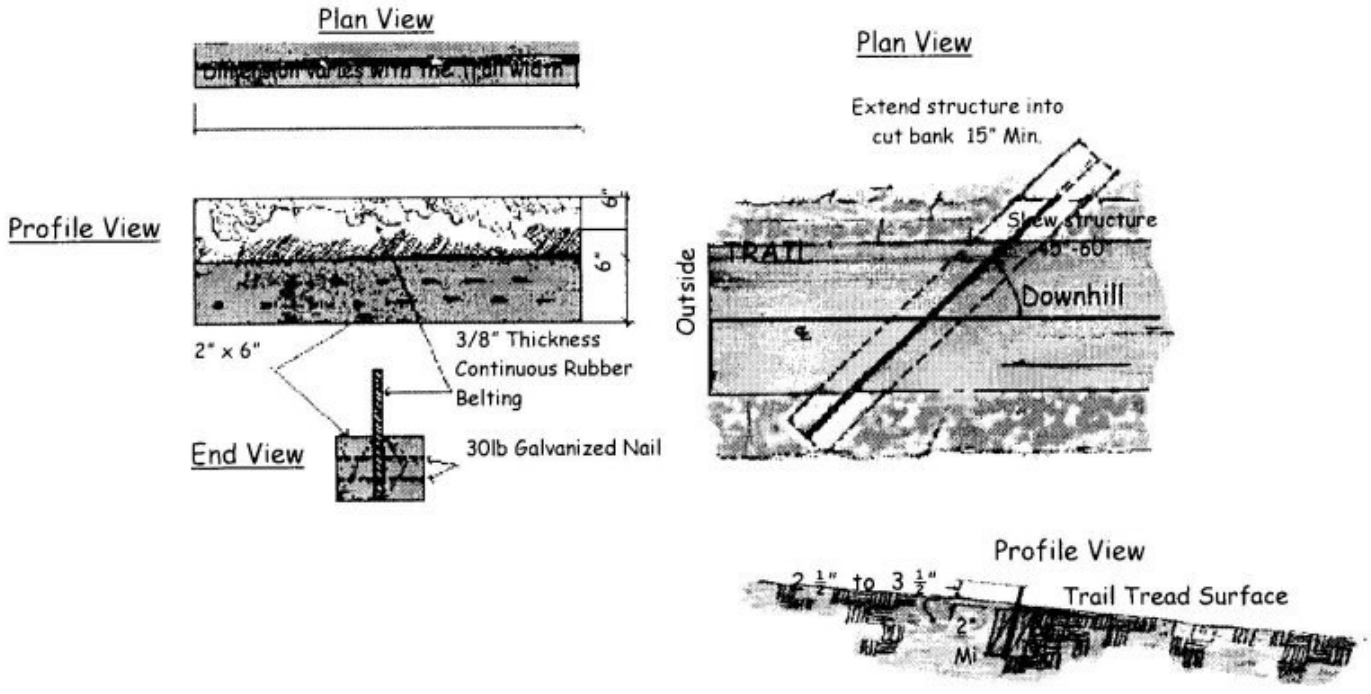
Trail Drain: Use where trail construction requires drainage such as along long and/or steep vertical ascents. Do not use where established drainageways exist. They are best if located at loss points or bends in trail. Transition from Trail to drain may require 6' at low points. 6' transition will be required up to normal trail.

B. Drainage Grates: Drainage inlet grates on bikeways will have openings narrow enough and short enough to assure bicycle tires will not drop into the grates (e.g., reticular type), regardless of the direction of bicycle travel.

C. Bicycle Safe Drainage Grates: Drainage grates should be installed where necessary to allow drainage and safe passage for bicycles.



D. Water Bar: Water bars will likely need to be installed at regular intervals on soft surface trails that are steeper than a five percent (5%) gradient for more than five (5) vertical feet. Rubber water bars should be used since they are the safest for multiple use trails, also construction is more economical, faster and easier than other construction methods.



(Ord. 2002-04, 3-20-2002)